Understanding neuroblastoma biology through the analysis of its genetic and epigenetic landscapes

Par

Isabelle JANOUUEIX

(Invitée par Valérie CASTELLANI)

Institut Curie – Inserm U8330
Centre de Recherche
75005 PARIS
France


Mardi 30 janvier 2018
11 heures
Salle des Conférences
 Médiathèque Paul Zech
Faculté de Médecine Lyon Est
8, Avenue Rockefeller
69008 LYON
Abstract:

Neuroblastoma is an embryonal neoplasm arising from the peripheral nervous system that accounts for 15% of cancer deaths in childhood. It is an enigmatic tumor presenting with a great genetic and clinical heterogeneity, both in terms of presentation and outcome.

The characterization of the genetic alterations observed in neuroblastoma led to the identification of major players of neuroblastoma oncogenesis that has considerably improved our understanding of the biology of this pediatric cancer. More recently, the analysis of the super-enhancer landscape allowed to decipher the core regulatory circuitries controlling the gene expression program of neuroblastoma. Distinct transcription factor networks predicate different tumor identities, corresponding to sympathetic noradrenergic or mesenchymal/neural-crest cell like identities. Cells of mesenchymal identity are more resistant to chemotherapeutic agents. Moreover, some neuroblastoma cells exhibit plasticity and are able to shift between the NCC-like and noradrenergic identities.

The understanding of cell identity, heterogeneity and plasticity in neuroblastoma has strong implications with respect to the development of new therapeutic strategies to eradicate tumor cells in neuroblastoma patients.

Selected publications